

MR. MYERS, SEATTLE, WASH.

JULY 23, 1895.

(Interviewed by Wm. Wakeham and Richard Rathbun)

A. As you are well aware, as a manufacturer, I am in the business for the profit, and of course my theories--I only studied it in that way--and of course my experience might be something that would be interesting. I came here in 1877, and located at Muckilteo, near the mouth of the Snohomish River, 28 miles from here and that year I made a pack of 10,000 cases. The only fish we had any knowledge of at that time were the hados or humpbacks and the silver salmon. I took that year a fish--I found that they were winter salmon, resembling the silver salmon, and we called them winter salmon--but there were not enough of them to be caught.

Q. Was that the steelhead?

A. No. It was different altogether from the steelhead. I am only telling you my experience for the first year, and since then I

have never been able to find enough fish of that variety for commerce. Then I left there and came up here in 1880, and since then I have given the matter more study. The winter salmon, the steelhead--there have been considerable hauls of what we call the blue backs, or, as you call them on the Fraser, the sockeyes. A few have been found coming in this river here at Seattle--Black River or Duwamish. We have never caught them in our purse seines, and we don't know of any quantities coming in here into these rivers--neither in the Puyallup nor the Duwamish.

Q. That is of the sockeye run?

A. Yes. They are very abundant, as you know, at Point Roberts and the Fraser, but I don't know whether they go up any other rivers than the Fraser. I never heard of them on the Skagit. I have fished in the Skagit and never got any other varieties. The steelheads run here in the spring and in the winter, and they get very good catches of them. There is a

salmon we call the tyee. It resembles the Columbia River salmon in looks, but it is darker and coarser meat, and after they have been here their meat becomes very white.

Q. When do you get those?

A. We are getting a few of them now.

Q. That is the chinook?

A. Well, they might call it a spurious name. It has a resemblance to the Columbia River fish, although they have not the nice bright color. I was explaining it to Prof. Jordan, and he said they had never seen one and he did not know that Gilbert had, but Mr. Gilbert called on me in 1883 and we had some, and he must have forgotten. I promised to send Prof. Jordan some when they commenced running. I met him a couple of weeks ago in Portland, and I think he went to Victoria; did you meet him?

Q. We have not been there yet.

A. Do you not belong there, Doctor?

~~Wakeham~~:--No; I belong on the Atlantic Coast.

Q. You say Jordan has gone up there now?

A. No; I think he was intending to go to Alaska, but I met him in Portland. He had been on the Sound and I think he went to Victoria.

Q. Well, now, on the Fraser River and at Point Roberts we hear of the chinook, which begins to run very early in the spring, the largest run occurring during May and June. Then a few are taken all summer. Again in the fall it appears; in September they have the fall run. Well, now, a large share of the fall fish are described as white meated, or partly white and red. They also get some of those white meated fish at other times of the year, but it is mainly in the fall run, and they are together apparently, the white and the red meated ones; and also some fish have both colors mixed, part being white and part red; would not that answer the description of your fish?

A. No; not necessarily. This fish is an individual and not a species of that.

Q. You think he is a distinct species?

A. Oh, yes; he is distinct and separate from that.

Q. Is he a larger fish?

A. Yes, sir. We might find some of them in the market here now. They are called the tyee. It is an Indian name meaning chief or king.

Q. It is the king of fish is it?

A. Well, no; but that is the meaning of it, I suppose. When they come into the market here, the Indians say they want to see the tyee. It is on now, and has been coming in here for perhaps 2 weeks. In my business I have never seen more than 8,000 or 10,000 at the most, in a very good season. They spawn without coming up the rivers. They spawn mostly right in the bays, and fishermen catch them mostly in the Sound.

Q. Just when do you have them most?

A. About the middle of August, I think. But their color changes. Now their color looks well, reddish, but when you see them get more

general they would taste as the Columbia River or Kennebec salmon would; but they are hard meated, and besides rather rank--very fishy. The best run of the tyee is over about the 15th of August to about the 12th of September. After that they commence lessening, and we do not get many after the 21st of September; then they almost give out. We don't take them, but we see them, because they become white. Pardon me for asking the question, but the Columbia River fish, I first noticed it that they commenced getting white at the extremity, and then worked on up until we get them where the lower part of the fish was as white as this paper and the upper part was crimson; almost those two colors (illustrating with 2 envelopes). We refuse to take them after they get white, and after the 20th of September we had no record of any because they get so pale that they are not marketable and we cannot use them at all.

Q. You are talking now about the Columbia River salmon?

A. Well, these tyees get the same way, and I first noticed it on the Columbia River--they would get white in the extremity and continue getting white to the head; now what causes it?

Q. I don't know.

A. You have been working on that have you not; what is the cause of it?

Q. Well, you cannot lay it to the fresh water, because they take them in the salt water. They take them at Point Roberts on their way to the fresh water.

A. These two colors?

Q. Oh, yes. The chinook, or quinnat, they will take in the salt water of 2 colors, and, in fact, the white ones also.

A. The Fraser River, I understand ~~that~~ you will find that those white fish come in early in the season.

Q. The real white fish; the white salmon; there is a great many white salmon and pink salmon come in there together. Now, those fish run--at least we have no record of them after

September. And before, how early can you get them?

A. Well, I think the earliest--I was referring to my book--in 1889 it was the 21st of July. That is the earliest record I have of them, but I will tell you candidly there was not enough before to testify. They may have been running in the markets a little; but the 21st of July was the earliest I have taken any in the canneries.

Q. Do you get the genuine chinook salmon here too?

A. I have never seen one on Puget Sound.

Q. Of course, they get them in the northern part, around Point Roberts and in the Fraser River, but we know nothing about this region right here.

A. This may have been called--this tyee--there is such a resemblance to it, excepting to an expert, but I can easily recognize the distinction.

Q. Unfortunately, enough attention has not

been paid to the western salmon by naturalists.

A. That is a fact; we only know them from a commercial point of view.

Q. Next year we shall try to get somebody out here, and if we can, we will get somebody on the salt water who can spend the entire season. Now, the sockeye; you say a few have been taken going up the river here?

A. They are distinct. The only time I have ever caught them, I had one season here a number of traps, and I got them in the river, and also got them in the bay.

Q. In the bay would you get them in traps too?

A. I did get them, yes; but only a few. I don't think that I got enough to speak of. There were so few of them that I packed them in with the silver salmon.

Q. You do not know of their entering any other rivers on Puget Sound?

A. No; I have watched it pretty closely. What I call my territory is within a radius of

where we could get fish to the cannery in good shape. I have never troubled it outside. Below you might find people more conversant with it.

Q. Who is there at Tacoma now who would know anything about the fishing there?

A. I don't think there is anybody. There are a few Italians, but nobody who could give you any intelligent information.

Q. The sockeye is not a fish that belongs to this region?

A. No.

Q. Who would know about the southern part, towards Tacoma, Olympia, etc.?

A. Prof. Swan is the most intelligent man and can give you the most information of any one here. We call him professor, captain, etc., here.

Q. We always call him judge.

A. Well, he is a judge too, especially if there is any whiskey around.

Q. Is he so now?

A. Indeed, I think a man as old as he is

who has tried to get outside of so much whiskey would never give it up. He has made the fishing more of a study and is interested in it. You will find him really very intelligent. He has been working for us for years off and on and he has helped Capt. Tanner out a good deal on the Albatross work.

Q. Now, supposing we take the humpback; and if you will tell us a little about them, when they appear and where they go?

A. The earliest I have ever known--well some 17 or 18 years ago the first I packed at Muckilteo were humpbacks; and the first I received was the 24th of July, and I had understood they were late that year, but in all following years I never got them as early as that; generally about the first of August.

Q. Would people be fishing earlier so that they would know?

A. OH, yes. They are a fish that fishermen never think of looking for or fishing for until they show themselves--whenever they make

their appearance. Their habits in swimming are a good deal like the porpoise--they roll, and the back fin is always showing at the surface; while the silver salmon is known by his jumping. We never think of looking for the silver salmon until we see him jumping.

Q. When does the main part of the humpback run come, immediately then?

A. No. I can give you the record of 2 seines in different years. The first came on the 7th of August, 1889--there was 1300 and I did not receive any more until the 9th. Then we got 1600. The next day the same men brought me 2500; 2 days later the same men brought me 3500. Next day, 2000. On the 15th, 4000. On the 16th, 5500. Again on the 17th, 4100. Then there was a jump to the 20th, 6700. Next day, 1500. Next day, 4300. The following day there was none. On the next day there was 6200. On the 25th, 4000. Well, they fell off after that and run down to 500 or 600, and on the 31st of August there was none to be seen.

Q. That was the catch of 2 men?

A. There was 3 men a greater part of the time. In the 6000 day there was 3 men. Sometimes there was 2 nets and sometimes 3, but the greater part of the time there was only 2 nets. You understand these hados run alternate years.

Q. What is this year?

A. Any odd year--1891, '93, '95 and '97--they go by the odd year when they are abundant. There are no fish on the even year; we never find one.

Q. Not one?

A. Not one. They avoid the country altogether on this part of the coast; and that is one thing I would like you scientists to tell me something about. This year we have them.

Q. They are getting them on the Fraser River already.

A. Yes, but very few.

Q. Very few.

A. In 1891 would be the next year now, and they commenced on August 1 that year. Well, 4

seines commenced on 1800. Next day, 1300. 4 seines next day, 3200.--Oh, well, generally they run them, the 4 seines, up in the thousands; and caught over 275,000 from the 10th of August. I had on an average about 4 seines. In 1891 the 4 seines from the 1st of August to the 10th of September, they gave me 154,702. Well, now the heaviest part of that run occurred from the 17th of August to the 29th of August.

Q. You make a good deal of the humpback in the years when they occur?

A. Yes, sir. My trade has principally been with the south and southeast. I opened a trade there years ago. I have been more successful in getting rid of this stock than the others, because I opened it in early times and made a trade in the south and southeast, and as the manufacturing interests of the south increased my sales increased.

Q. That is south and southeast from New York?

A. Yes, I don't mean from here.

Q. But a humpback is not as good as a sockeye?

A. Oh my, no; the quality of them is far inferior to the sockeye. I was going to give you my record as I have it.

In 1893 the hado; the total in 1893 of the hados was 229,052, and the seines employed, they averaged about 7 seines. That year the greatest run occurred--well, the greatest run was not until the 8th of September.

Q. Where does the humpback salmon go to spawn; what you have in this region?

A. Well, that is another peculiarity; something that needs a naturalist to explain. They avoid certain rivers. There is not one found in these rivers. The only rivers that I know of that they go into in this neighborhood, are the Elwau, the Hoko?, the Fish and the Dungeness rivers.

Q. You don't think that those humpbacks which you get here could go up in the Fraser River?

A. No, I think not. We get them too late here. Well, from my observations and experience and that of my men--I have one man down in the lower part of the sound, and he reports that humpbacks have been seen below Dungeness. That would bring them up here--we generally find them up here from a week to 20 days from when we first find them coming into the Straits. That is the silver salmon. I don't know about the humpbacks because they come in large schools and they move very slowly. Although they are a pretty vigorous fish, they die very easily in the seine. They make one spasmodic effort and then they seem to give up. They are caught mostly with drag seines.

Q. The seines you have been talking about, are they drag seines or purse seines?

A. These seines for catching the humpbacks are all drag seines.

Q. Where are these seines hauled, in salt water?

A. Yes, sir; they are hauled on the beach.

Q. How far, in a general way?

A. What, the humpback?

Q. Yes.

A. Well, we get them at Sir-mile Point and at Muckilteo, and at the mouth of the Snohomish. The fish that we have, the hados and the humpbacks, come in the Straits, and some come in from the north.

Q. Through Goletas Channel?

A. Yes; up above Vancouver. They come down from Vancouver. I think we get them from the Straits in the same way. Why I think so is that the humpbacks we get in Fraser River mostly come in through the Straits of Fuca, and the others that come up in here come through Deception Pass, and there is one school that we always find coming around Skagit Head within 28 miles of here. Those we find in the inside sound at Utsalady, and those fish must come through Deception Pass. They don't certainly divide there because there must be a distinct school. Then, they come through the Gulf of

Georgia. Now, these fish that come in here must come from the Fraser River, or why should they come in here and around that way (illustrating)?

Q. Of course, you know this is a matter on which we are entirely ignorant?

A. Well, there are a great many fish come in through the Straits and go up into the Fraser River, and I think they come up around Orcas Island, and come up here to Whidby, and why should they break down here and go through there, and then go right down and come up in by Snohomish. Down through the Straits of Fuca and up is what we call the course of the Fraser River fish.

There was a large run of fish down below. I have just got a report from one of my men at Whatcon, but it only lasts for a little while and it is all done now.

Q. Now, up in the Fraser River they say the humpback spawn everywhere and anywhere; in little creeks, and every sort of place of that

character, and even in drains sometimes; and pile in close together.

A. I know nothing of them, excepting that they go into these certain streams. After they once get in fresh water they get very slimy.

Q. All your fish are caught in salt water?

A. Yes. Let me say that my experience has been that the fall fish taken on the Columbia River, Oregon River, and Puget Sound waters-- the fall fish, understand; the spring fish are all right--but the fall fish are worth less as being too near spawning and the fresh water has that effect on them. They get sick, and I suppose the spawning weakens them so that the flesh is reduced to no taste at all, and they are not healthy I suppose.

Q. I think it was the general opinion on the Fraser River that after the 25th of August the sockeye were beginning to fail, and a good many said they would not injure their brand by putting up such fish.

A. I think on fresh water--well, you

could not calculate hardly; the sockeye generally commence in June and they keep paddling along--but what is distinctly known as the fall fish in the month of August, September and October,-----That is as much as I know of the hado, that there have been years where the catch has been lighter than others, but as far as decreasing or being decimated by commerce, I cannot notice it at all. In fact, with more appliances than I had in years gone by, I can still get greater quantities than I had at that time. That is, with the hados, and also with the others. The hadoes go up these rivers--they avoid the Duwamish River and also the Skagit River--I think very few are found in the Skagit River, but the 2 rivers here that I depend on is the Puyallup and the Snohomish. I am right here at the mouth of this river and I know they never go in, and the Indian legend is the same. I have employed the same men and their fathers for the last 18 or 20 years. They go up those rivers and are found at the headwaters.

Q. What sort of rivers are they that they go up?

A. Well, they are mountain streams. How far up they go I don't know. They have been found up almost as high as salmon could go; up to the rapids; and a curious thing about it is there have been some young salmon found above the falls.

Q. How high?

A. Oh, 25 feet. Now how do you suppose that is? Could it have been birds that impregnated the eggs and then dropped them? These were humpbacks.

Q. Is there no other connection?

A. Nothing that was ever known of. There are little branches that they might possibly have gone up.

These fish come in myriads when they do come in a good season and there has been no decimation by the amount that has been taken.

Q. The extent of the fishing carried on here has not been very great?

A. No, not on Puget Sound. I suppose within this last 18 years I have packed about 280,000 or 300,000 cases at the most, in that whole time. There has been several other canneries here. There was 4 canneries in this neighborhood at one time. I am the only one within 70 miles now. Some moved to Alaska and some were sold out by the sheriff.

Q. There are no canneries above you at all?

A. No; none at the upper part of the Sound.

Q. And the nearest below; is there one building---

A. There is one building at Port Andrews, but they are novices and don't know anything about the habits of the salmon.

Q. Did you begin here before you went to the Columbia River?

A. No; I was on the Columbia River before I came here. I operated on the Columbia River for a number of years--and I was very fortunate

~~I came here. I operated on the Columbia River~~
~~for a number of years and I was very fortunate~~
in leaving. We were too thick there, and I
thought I might as well quit while I was young.

and

Now the silver salmon--they have them at
Hood's Canal; that is farther than I go----.

Q. What is Hood's Canal; is it all salt
water?

A. Oh, yes; it is an arm of the sea. It
is a rough, mountainous country, and it just runs
right into the sea. Fish run up all through
these little places, Duckabush and Dusewallips.
This used to be a very important lumbering
country here at the mouth, around Port Gamble.

Q. We intended to go to work and survey
Hood's Canal with the Albatross, but have not
gotten to it.

A. It is very deep and narrow--and it is
grand; with the mountains, you are hemmed right
in, and with the moonlight shining on the snow,
it is a grand sight.

Q. Now, I interrupted you Mr. Myers.

A. Well, I ran for the legislature 4 years ago--I am more interested in our fishing laws than anything else, but unfortunately our last legislature, the Republicans were in the majority by 52, and we antagonized ourselves on the central election, and we did not get our bills through. And then, besides local interests, we did not get through a good law on the Columbia River. I voted 41 days for Mr. Dolph, but we did not elect him. If we had continued 4 or 5 days more we might have gotten into personal difficulties by getting ourselves worked up.

I am always very much interested and willing to give information that will be of interest and develop the industry, and at the same time perpetuate the stock of fish. I was well acquainted with Capt. Collins and Mr. Wilcox. I was there 5 or 6 years ago; and at the World's Fair I was acquainted intimately with Collins.

Q. We are beginning now on the silver salmon, or coho.

A. Well, the silver salmon come in--they

make their appearance in September. In 1889 I think on the 28th of August was the first and earliest silver salmon that I ever took. Now I was telling you about those sockeyes. I have just come to it. It was on the 26th of August, 1889, that I received the sockeyes, and there was only 10 of them.

Q. Do the sockeyes correspond with anything on the Columbia River?

A. Oh, yes; I believe they are identical with the fish we call the blue back. I think, however, they are a poorer fish, but we find them in the salt water fish, and you take a salt water fish and put him in fresh water and he is not as symmetrical as when in salt water. And these fish look different from what they do in the Columbia River. You gentlemen might explain to me why it is that fish have so much slime on them, as we find them in the salt water.

Wakeham:--I don't think the Atlantic salmon have.

A. Well, sir, I really think that when

our fish come here; the early fish, and in fact during the season there is more or less of it-- but on the outside of the fish there is from $1/16$ to $1/8$ of a coating on them; and it is almost impossible for him to hold it. In early times I used to think that I could take that off and can the fish by using certain articles such as salt--let them soak and salt and then brush it off, but the great difficulty in putting the fish into the can, they would slip out of our hands and ^{would} wobble around all the time, and then in cooking the fish all this slime that was on the outside would congeal on the top of the fish. But I found out that the atmosphere was the best thing to clean them. I took my fish one time that I could not take care of, and I noticed that there was immense piles of slime laying all around the fish, and I picked up the fish, and the scales were perfectly new and clean, and I found that the atmosphere was the best thing for it because the air just loosened it; and I have saved all the salt that I was

formerly using. That one thing I have always noticed more particularly about the silver salmon; there is more slime on them than any of the others. I suppose that slime is a coating that gives elasticity to them in the water, and at the same time gives warmth to their bodies. What are your ideas as to that?

Wakeham:--I don't know. They seem much more slimy here. We had our attention called to that by Mr. Ewen, and he alluded to the fact that they are not so slimy on the Atlantic coast waters.

A. The humpbacks come up the Stillaguamish and they don't go up the Skagit at all. They silver salmon commence running about--I never make any preparation before the 4th of September and I always look to see the close--I never make any dependence after the 23rd of October for silver salmon. Although in 1886, when the season had been a very disastrous one here, I heard that there were some fish at what we called then--where the town of Everett is now,

and it was called Telegraph Point, and I was in the act of storing my seines and the men had come into the office to settle, and when this report came in, to encourage them to try a day or two longer I told them I would take them down there and take 2 seines, and I started them in about 2 o'clock in the morning and at half past 5 I was there and I never saw so many salmon in my life, and by 11 o'clock I had 10,500 salmon in the boat. : and in one seine I believe the Indian had 10,000 fish in it and to save them--they were jumping over--and he hauled his cork line too tight and broke his line, and at the same time he got 3,390.' The other Indian, who was more cautious, continued fishing there 3 days and I got 28,000 fish, and the 4th day there was not a fish to be found or heard of. The school had passed and there was not a fish found that season afterwards. The habits of the silver salmon; they school, but they distribute themselves, especially in this bay, there is so much steamboating going on

that the fishing is not as good as it was in earlier years; they distribute themselves and are found jumping all over. Those fish, we never think of going after them with seines. I employ different kinds of seines. The seines we employ in this business for capturing the silver salmon is the purse seine. I had been here a number of years and been always fishing these drag seines and what we called a fly seine, and I was crossing the bay--my cannery was on the opposite shore then, and I had some business on this side, and I had a Chinaman to pull me back and forth, and while we were pulling across he told me, "you ought to get seine all the same Chinaman," and I asked him what kind of seines they were, and he said, "Oh, they are big and deep," and I listened to his story, and to give an explanation of it, he picked up a newspaper and said "make them all the same that way" (illustrating). That was an idea. He said make them 1500 feet, about 2000 feet long, and make them 200 or 300 feet deep.

I said it would cost lots of money. He said, "Oh, yes, lots of money, but catch heap fish." He wanted me to let him try it and said he would put the nets together if I would let him have them, and I said all right, I will not charge you anything. He went home and I got a man to help him fix up his nets; and that fellow the next day brought me 5,000 fish. I was satisfied then that I had a seine that would work.

Q. You don't mean to say that was the first purse seine here?

A. That was the first correct purse seine here, but there was lots of purse seines here. I had seen them here, but there was none of them useful seines. They would come out here and I would buy their webbing and cut it up to make drag seines. Well, the result of it was that the next year I ordered some 8,000 lbs. of twine and I made it in 2 seines. I made it 250 fathoms long and 35 fathoms deep. Well, sir, I had a seine then. There was a feeling against the Chinamen here; and then I employed

men from the Columbia River. I brought over the best men I had over there, but when they got over here they could not work it and they condemned it, and I had a lot of bother. These 2 seines had cost me about \$3,000, and my competitors were laughing to see how I had thrown away my money. These fishermen would not allow the Chinaman to learn them anything about fishing. We fooled around almost 2 weeks and it cost me money to keep those fellows, and at last I told the boys we might as well quit. "Well, what are you going to do with your seine?" they said. "I am going to give them to the Chinaman," I replied; and the next day the Chinaman went out with the Indians, and I had fish that year until I could not breathe. These seines were differently constructed from the others.

Q. They are described in the Fish Commission reports are they not?

A. No; I have never given them any description of them, except to call them purse

seines. They are expensive. I had 10 of them; using them from scows and boats. They all use them now in this neighborhood, but I was the originator of them. The fishermen watched my men making them, but still they find out their seines are not made like mine.

The silver salmon run here until about the 25th--the latest we fished was on the 28th of October, 1886. The silver salmon run every year. There has been reports that the silver salmon had been decimated, but my product has been increasing from the lowest, 1878 cases, to 18,000 cases. Last year I did not come out fortunate and we packed 12,000 cases. The silver salmon frequent almost all the rivers of Puget Sound.

Q. They go into the Fraser?

A. I think that is what they call the coho in the Fraser. My success has been principally watching the meandering habits of the silver salmon; in this bay sometimes there has been a great number coming in and other

years they have not been, and at the same time when there has been a light run here there has been an immense run in the Snohomish and the Skagit and the Stillaguamish; and down below all my sail boats have been picking them up at all points; and they are found up at the heads of the rivers, just the same as the humpback, and they are found dead. The vigorous ones--as far as coming back, you folks know whether they come back or not--but we always think it is only the vigorous ones. My information was gotten from the Indians, and it has originated with them that only the vigorous ones get back, of all kinds of fish. If you watch the salmon from the entrance from the sea into the shallower waters you will find that fellow has a turbulent time; and he becomes exhausted from his travels and from the bruising, and spawning; and he must be a sick kind of a fellow after he has got up there, without he has got a hospital to go into to recover, and there is no such thing as a hospital for the salmon,

because the enemy still pursue them.

Q. Do these salmon feed in the fresh water at all, do you think?

A. These salmon?

Q. Any of them?

A. We have never found any fish that we are conversant with in the stomachs of the salmon. But we find in the silver salmon down here something that resembles herring, and I imagine, from the fact that the silver salmon going after the troll, representing a fish in the water, that they must eat. Now, I have been very much interested, and I don't know whether, in reading the accounts of the Albatross of the explorations they made outside the Columbia River, or in their deep sea soundings they found food similar to what we found in the stomachs of the Columbia River salmon, and I have often been asked where the salmon come from--the same way in the Straits of Fuca in the deepest water the same thing occurred there, and I have, from these explorations, been led to

believe that they must come from immense depths, and no doubt they remain there until nature drives them into the rivers. We had an idea before the salmon were discovered in Alaska, that the salmon must come from the north, but they had their special seasons for going in there just the same as the Columbia River. If they come from long distances the whales and sea lions that pursue them; they would soon become extinct. What is your idea? I may be visionary about it with that kind of an idea.

Q. Dr. Wakeham is the man who lives in the salmon region.

Wakeham:--We know very little of what becomes of the salmon after it leaves the rivers. Of course on the Atlantic coast the salmon does not die in the river, and it is a very unusual thing to see a dead salmon.

A. On the passage up the rivers no doubt they become exhausted a great deal.

Q. But they seem to die here even in cases where they do not necessarily become

exhausted, because they find them dying in creeks near the sea.

A. Those may be returning fish, because I have seen them on the Columbia River in little bays way up in out of the way places, right below mill dams, all covered with spots and sores; and then I have seen them--I have seen fish in the Willamette River at Portland--I remember seeing that salmon just going gliding right along and he did not hardly move his fins; just seemed to be too much for him to move. That was a returning fish no doubt, exhausted. He was not covered with these animalcules that we see on them, but still nobody could have picked him up. He was what we call a sick fish.

Q. Do you have the dog salmon down here?

A. Yes, sir. I was going to finish up on the silver salmon. They go up the rivers and we never see them. Their disappearance is like the falling of a rock from a precipice. There may be a very good run, as my books will

show, for 2 or 3 days, and it will drop off until it will get down to 40 or 50 to a boat, and next day there wont be a fish. Their disappearance is sudden.

Q. How do they correspond with the hump-backs in extent of catch and pack?

A. Oh, they don't run nearly--Well, I don't know but what they might be nearly equal, and will explain why I think so. The hump-backs they have certain rivers; the others go into all the rivers. The silver salmon will distribute themselves more. He is more migratory than the others. The other center most at certain points, but the time they are here will differ. If anything the silver salmon last probably a little longer; probably 6 weeks; while the other will not over 5, which is the longest record I have ever had, and it is generally 4 weeks. The dog salmon we have. The Indian name of it is Skowitz. I will remark this; that I don't pack any dog salmon, but I pack a great many Skowitz. People would

not like to eat a dog, but they would eat Skowitz. Their season is, 2 weeks before the silver salmon leave, usually get the Skowitz. I will give you an idea of their first appearance. In 1889 the first Skowitz I received was on the 5th of October. There was a few scattering fish on the 25th of October, and their last appearance was on the 27th. In 1890 the first appearance of the skowitz was on the 17th of October. Here is a break in this. On the 21st of October, 1891--but they came from Hood's Canal. The dog salmon run in Hood's Canal much earlier than they do here. It is a singular thing that the season is almost reversed there, the dog salmon come first and then follow the silver salmon. It is a singular thing, but I never gave much attention to it, and only know that to be a fact. They commenced in 1891--the last fish I received that year of the dog salmon--they had stopped running--was the 9th of November. In 1892 I received the first dog salmon from

Hood's Canal on the 10th of September. Here they did not commence running until the 21st of September. That was a very early year for them. The last received was the 15th of November. In 1893 it was on the 30th of September. The last was the 17th of November. In 1894 it was the 27th of September. The last was the 17th of November. These fish are the most vigorous fish that come into the Sound I believe. When they first come I think they are equally as good as the tyee, if not as good as the silver salmon; although they are not as good in color. They change their color at the last and are very pale. Their hide becomes black and spotted like a tyee.

Q. Do they run up many of the rivers here?

A. They run up all of them. They are like the silver salmon. There are immense quantities of them here at times, and they are not distributed and migratory in their habits. This fellow spawns mostly at the mouths of the rivers in the sand. They are much better than

they are up in the Inlet.

Q. Do you have the steelhead here?

A. The steelhead we have very few. They are more for fresh market. I know all their habits; they go into the rivers, but Messrs. Ainsworth and Dunn can give you a better idea of them.

Q. Is there any other salmon you think of here?

A. Well, there is a little salmon, but I never studied their habits, excepting seeing them in the markets and my fishermen bringing them in. I have caught shad here.

Q. How many shad have you caught?

A. Just only a stray one. I suppose there is plenty of shad over on the Columbia River; they are very cheap.

Q. Is there any drifting done about here at all?

A. Not in the bay. That is why I don't understand much about the steelheads; we seldom catch the steelheads in the pound nets or in

the purse seines; they are mostly caught in the rivers, and are caught in set nets. The drift nets are the same as a set net, but on account of the different currents and tide reefs that ^{around} drift [^] back and forward, are too much for them, and then, besides, so much steamboating here, but near the mouths of the rivers--and then they command a much better price than we can afford to pay for canning them; that is steelheads.

Q. They speak of them in a great many places as being a trout rather than a salmon.

A. Yes; on the Columbia we would not take them at one time. Now they are getting as high as 2 cents a pound for them.

Q. Now, the methods of fishing in Puget Sound are--you have the purse seines?

A. Yes. Drag seines, purse seines, traps and gill nets.

Q. The gill nets always being set?

A. Well, I am only speaking of this locality. I never heard the men tell me that they set them in the mouths of the rivers and in the rivers.

Q. They don't set them in the bay?

A. They do if they can find piles.

Q. What is the trap net like; is it as big an affair as the traps fished about Point Roberts?

A. It is the same thing.

Q. Are there many fished in this region?

A. Not many. I gave considerable attention to it some years ago and invested \$8,000 or \$9,000 in it and it never paid me, and I never got the value of one-tenth of it, and when I was burned out I eliminated traps from my portfolio.

Q. Does nobody else use traps about here?

A. No. The silver salmon I am satisfied don't lay, but the sockeyes do and the humpbacks where the traps are put in.

Q. Then the purse seine is the most expensive thing used?

A. Yes, in this neighborhood.

Q. That is to the upper part?

A. Yes, sir.

Q. And down as far as where?

A. Down as far as--Well, it is down in the Straits; I think the only traps there are at a place called Stewart Island. If you can see San Juan Island you will see a little island called Walkers; there are traps down there, and then up above at Point Roberts is the other place. There are 2 traps on the north end of Lummi Island, and I guess that is the lowest down traps are set, except at the mouth of the Fraser River. The Canadians don't allow any traps on their side I believe.

Q. No, except in Boundary Bay.

A. Do they allow them in Boundary Bay?

Q. Yes.

A. I think they are damn fools then if they don't go in there and fill them up. I think it is ridiculous to ostracize a certain kind of gear. Destroy one engine and a man will invent something more destructive. I want to be advertised as advocating this procedure: make the laws so that you will imprison a man instead

of fining him. A fellow will go on the Columbia River and Pay \$50 for the offence, and at the same time make \$200. Our American laws are lobbyings.

Q. What is your general idea of fishery legislation; what will salmon stand?

A. Well, I think that the ingenuity of the salmon is equal to the ingenuity of man, to capture and escape. I think that the only necessary legislation is, legislate certain seasons for fishing, condemn certain streams on which are established hatcheries. I think, in a few words, that is all the needed legislation.

Q. Now, you take the Fraser River, ~~an~~ you have only one stream in which the sockeye goes up. Now, you have them fishing from Sumas down to the mouth of the river and from the mouth of the river out to the boundary. Then when you come on this side of the lime you have fishing all around Point Roberts. Now, that seems to take all the sockeye that come through the Straits of Fuca. Now, how are you going to

save those fish? It is, of course, to the interest of those who are engaged in the fishing that the fish should be preserved. They don't want to catch them all up in one or two years.

A. Well, my idea is the same as in other streams.

Q. But what I mean is you have no chance there. You have not got several streams, one of which you can shut off as a preserve.

A. They must certainly--there are other streams emptying into the Fraser, and they must go up those streams.

Q. But there is no fishing allowed in the Fraser above a certain distance. The whole upper part of the Fraser is protected.

A. Well, that is good enough then. The only thing is I would shorten the season for them to fish. I believe in the condemnation of certain streams. Like the Willamette River for instance; that river has good ground for spawning.

Q. Do you think the fishing apparatus at

the mouth of the Columbia River and at the mouth of the Fraser River allow enough fish to go up?

A. Oh, undoubtedly; but I think it is becoming--well, I think there is enough escape to keep up, with artificial propagation, but I think it would be much better to shorten the season, for a certain number of years at all events. I believe it would be a good idea to shorten the season for a number of years; say for 5 years. That would be enough to try the experiment, and if it was no benefit, then to open it again.

Q. Now, at the present time there is no evidence that the fish on the Fraser River have decreased. It is one of those things which is hard to tell. You don't notice the decrease until there is a good deal of a decrease, so that if that were tried there it would hardly show anything. What is the extent of your season here?

A. Well, they fish for the sockeye up to

the 25th of August; then they stop until the last of the sockeye run is over, and then they allow them to begin again about the 10th of September.

Wakeham:--And they fish with the same sockeye net for humpback and dog salmon. There is also in the Fraser River a long weekly close time. They do not fish from Saturday morning until Sunday evening.

A. Those are good laws, but I believe it would be well enough to eliminate that Sunday clause and shorten the time of fishing. But without you have concurrent jurisdiction with this country it amounts to nothing. That is the only thing.

Q. How would your law do with regard to the trap nets, to have a weekly close season?

A. Well, certainly.

Q. I mean in that case?

A. Certainly; have the same thing to apply to them both. But I would advise by all means--there will be illicit fishing by

making this close season. It may not be on the Canadian side, but it will be on the American side. My experience as a Fish Commissioner of Oregon; I have hired teams to go out and watch them, and we have at times caught them, and I find that on those sand heads they will get in quiet out-of-the-way places, and they will have guards, so that there is not one out of 50 that is taken.

Q. When did you begin on the Columbia River?

A. I finished there in 1875. The last canning I did was in 1888. I was Fish Commissioner from 1891 to 1893, and my experience has led me to believe that it would be much better to dispense with the close season. Make the whole season shorter; then a man who is found with a net in his boat, he was not allowed to use it during this close season--he may have his net in the boat I believe--but during the weekly close season, by the time you got out of sight he may be fishing.

Q. You would shorten the time at the end?

A. Yes, sir; at either end.

Q. What I want to ask you is this: You know the fish that are hatched by the Fish Commission on the Columbia are the fall run only?

A. Undoubtedly. I don't say altogether, but what few fish are taken there we get up in the streams. Now, on the Clackamas, that is the only hatchery and is owned by the United States.

Q. Now, fishermen claim we are hatching the fall fish; that we are only hatching the fish that come back in the fall and are not benefitting the spring run.

A. I don't believe that. The gentleman that is in charge of it there knows as much about spring fish as any expert, and is scientific on it. But of late years, on account of the obstructions in the Clackamas River, he has not been able to get as many fish as formerly. But I think really the cause of having so many chinook salmon in the river this year

may be attributed to artificial propagation. I have no doubt of it. This year it has been expected there would be a good many, as they were taking very large fish. The canneries themselves have made up a fund of some \$10,000 or \$15,000, and they are going to operate a hatchery of their own.

Q. Well, now, don't you think that there should be some restrictions put upon the amount of apparatus used?

A. I don't think it is possible to do it. I don't see how----

Q. Canada does it everywhere.

A. Well, I don't know how it would be in the United States. There is no limit to a man's business. I don't know of any other similar circumstance in any other business, of restricting the business.

Q. The only thing is that when a man is engaged in farming he is planting what he reaps. Now, with the fish, you have a common stock, and, of course, no one man can be expected

to look out for the welfare of that common stock; either the State or Federal government has got to look out for it. Now, the question is whether the government should not take every measure possible to keep up that stock?

A. Very true, but with our laws, I don't understand how it can be done, but it may be. It would be a good idea. I admit it is a good one, but how it is to be done--it would be impossible. Another thing, if you should limit--it would be like an excise duty. This division here might be allowed 40 nets, and here is a place over here with a great many fish; a man might want to put in his net, but cannot do it there is so many nets given out, and it would work, an injustice; and at the same time if one canneryman was not allowed to put in more nets than this, he could start another cannery and deliver all the fish from that cannery here.

Q. On Lake Erie the larger firms in the western part--the Sandusky Fish Company, as an

example--have come to the conclusion that they have got to cut down the amount of their apparatus; and it amounts to this in the end: that they cut off a great deal of expense, and they will catch a proportionately greater number of fish with less apparatus. That is, the fish they do take costs them less, because they have had out there miles and miles of pound nets, and making small catches, and keeping up their netting, buying netting every year and employing large gangs of men; and the result has been that for the last few years they have been losing money.

A. I appreciate the idea, and believe it could be done between ourselves much better than it could by law. At the same time, admitting the logic of your remark that we could get more in proportion and be less expense to us, and we naturally would do better; but there is so many going into the business, and they want to make all they can at once. We tried to do that on the Columbia River, but there was

new establishments started.

Q. The only thing is; a state regulation which would place a limit on fishing, if such were enacted, those who, are in it would be protected, the same as the fish, and of course those in it earliest would actually receive the most protection.

A. I would have been kind to that, but as far as Puget Sound is concerned, I would as soon do less fishing--commence later or stop earlier--if it was necessary, but on Puget Sound, we have never seen anything of that kind; it is not necessary. I am speaking individually, for myself, but my experience has been on the Columbia River, where, I don't know, I believe it is shortening the chinook stock, but it has never been decimated as much as here, I believe. We have extraordinary years. I was on the river in 1885 and 1886, were the largest packs we have made, being, the one year, 700,000, and the other 6,000,000. But taking those large years out, last year was almost like the standard.

Q. What was the old pack?

A. Oh, well, it ran from a pack of 2,000 or 3,000 cases until it got to be 700,000. Last year they got something over 400,000. Former years they were running from 350,000 to 450,000. Those former years everything was included in the stock of fish, you understand; blue backs, steelheads and chinook salmon were all mixed together, but now they are distinct. But, with all that, I think the chinook salmon are a great deal less the last 3 or 4 years. Since they have been keeping them separate they are receding. It may be this year there will be a larger pack of chinook than there was for previous years, for some years.

Q. Of course, we have nothing to do with the Columbia, but it is just for comparison.

A. I have been advocating the shortening of the season, and am for having no close times within the close season; that is, Sundays. We have a Sunday law in Oregon, closing from 6 o'clock Saturday night to 6 o'clock Sunday night.

Well, I would eliminate that altogether. Take off that time, that would be--from the 10th of April to the 10th--pretty near 16 weeks; there would be taken off those 17 days. We intended to take off one month.

Q. What is the end of the season now?

A. 10th of August.

Q. You stop the 10th of August on the Columbia?

A. Yes, sir. Open on the 10th of April and stop on the 10th of August.

Q. Then do you have a later fishing?

A. They start the 10th of October and they fish until the 1st of March.

Q. Do the chinook run much between the 10th of August and the 10th of October?

A. Last year there was an immense run. Fish were very late and an immense number went up.

Q. It is a principle which Prof. Huxley always enunciated, that why protect fish during the spawning season if you permit fishing

methods so extensive as to catch up all the fish during the remainder of the year. That is whether, the same thing we were speaking of before, limiting the fishing during the fishing season as well as having a close season. Now, around Point Roberts--of course that is the point where we are interested now--they have got--(referring to map). Now, here is Point Roberts, with the boundary line here, the Fraser river coming up in there. Here is 1 trap inside of the boundary line and one outside. This don't reach the shore, and that does not reach this one. Then there is a net here reaching out 1600 feet. Then there is one here 1 1/4 miles. Then here are 3 nets along like this. Then there is a net here and a net here with gaps between. Then there is one that runs up that way to the boundary line, and 2 on the Canadian side--they allow pound nets in Boundary Bay. Now, the thing is this: this is all available for pound nets. Now, if you begin to run your pound nets out there everywhere, if

the fish are skirting the shore, whether they are not going to cut off the fish there to such an extent as to injure the fishery. You see in the Columbia River your traps are different from that. Your traps are all separate traps.

A. I pity the fellow who is up the Fraser River when all that territory is in there. Our government--the United States government--prevents them from putting any more traps in there.

Q. No; they are putting in more traps.

A. But here is this decision of Judge Hanford's with regard to the Indians.

Q. No; the Indians got ahead of them. It was overruled by Judge Hanford. The essence of it was that they could continue the traps they had for the present, but he would not permit any more. Mr. Wadhams said the injunction had been dissolved. Now the thing is whether there should not be spaces between the nets; whether nets should be allowed to form a continuous line?

A. I am not experienced enough to know

about traps. A number of the Indians have certain fishing rights by their treaties that cannot be touched. The judge in this case decided that they could get enough fish to eat and that was all the Indians were expected to get, and the parties who made the fight over it were used up on that part of it. I have never seen this injunction published that you speak of. If they are now putting in traps it certainly must be so, however. I am not competent to say what the wants of the Fraser River are, but if I was a Fraser River canner, I should be going down and trying to get on this small reserve.

Wakeham:--In the Fraser River itself I don't think they could fish trap nets; it is too swift, and there is so much stuff coming down, it would form a bar at once. They have no desire to fish traps there, but they might on the coast north of Point Roberts.

A. I understand now the idea that it is just like a man holding a door open to keep somebody out. It don't seem to be fair for the

men in the river.

Q. There is no close season there at all because no Washington law applies to that part of the coast. Of course, we well recognize the fact, Dr. Wakeham and I, having seen so much of fishermen; their supposition is that they are going to get rich in the course of a year or two, and the best way is to fish when you can; but the protection to the fishes there is in their interest, for if they were licensed; putting aside the question of raising any money by licenses; that they would be protected in the possession of their nets and the number of their nets and all--simply making them conform to the law, we provide for the preservation of their fish.

A. Well, it will have to be done by special legislation I guess. That is the only way I see. Because you present it to the government--the facts--and your own observations are sufficient to make a statement of facts.

Q. I don't know. What is your idea of

the wheels on the Columbia River; are they any more harmful than the other methods of fishing?

A. I think not. I am in favor of all kinds of fishing appliances, but I believe there ought to be legislation in regard to the times of fishing. I think the fish come in to be captured, and to perpetuate them they ought to shorten the season.

Wakeham:--I am quite with you, as a fisherman. I have always been in favor, in connection with my own department, of all modern appliances. If a man can catch more fish at a less cost, he should be allowed to do it, but, at the same time, they should regulate it.

A. You limit one form, as I said this morning, and you will find a more destructive engine of destruction.

Q. It is very amusing on the Great Lakes, how the pound net men are down on the gill net men, and the gill net men on the pound net men.

A. That is what disturbs our legislation. The pound net men had so many friends, and they

were mostly farmers and they represented the poor men, and they maintained that the bill would destroy them if it was carried; and here were rich men, and they held me up as a man who could down them, etc., until we lost a great deal in some things that way, by men who had not given the matter consideration. I would let them fish all the reasonable devices possible. I would not permit them to use explosives or anything of that kind, because that not only destroys the fish they want to capture, but every food fish. At the same time, I believe that no fish comes in here except nature brings them. I don't think they are accompanied by friends who want to see how they get along, or how it is done, or anything of that kind. They come here because they are able to take care of themselves, and they only come in because nature compels them to come. I am pretty well defined on that. I am positive that this is the way. It is the same way--it would be a curious thing, if I find things beneficial to man--if I could make a gill net that I

could operate successfully, that I could not use it. There is no legislation that can affect the seas--and that would be another object in legislating down there; that that would be a part of the sea.

Q. Mr. Myers, in a measure this is the sea; it is the sea in so far as it is salt water. Yet the salmon have started upon a regular migration in through Puget Sound and the Straits of Fuca, and when they enter the Straits of Fuca they are practically in the river, and you almost have to regard the whole thing as a river, from the mouth of the Straits of Fuca up, and in the Fraser River especially, as you have the sockeye taking that one course.

Wakeham:--I think you are differently situated down here in that you have the fish scattered over a large extent of territory.

A. Oh, yes; it is different here.

Q. Of course the Alaska Packers Association has a very large capital and they will do probably pretty much as they wish to do. Is it not a

fact that pound nets cannot be connected on the Columbia River?

A. Oh, no.

Q. They are each separate?

A. Each pound net has, on the shore, to leave an opening so many feet for small boats to pass, but you can put in 2 or 3 on the ~~same~~ line.

Q. They don't do it much there.

A. Oh, my dear sir, the last 1 or 2 years they got so think ~~it~~ was complained by the engineers that it was affecting the navigation of the river; that is at the lower river, but when they got up--I found one trap that was not far enough out and I ran right out and put another trap right on the end of it, and I was not molested, but the manner of doing it was in this way (illustrating). Here is the trap, and they have a lead, and they break off this lead, and start it back here and run it out, so that it is almost a continuation, but its being broken off it gives the boats a chance to get

through there, and, at the same time, the fish when they strike this inner shore--they run out 20 feet--and they run right through and strike this second lead and lead right into the trap. They can connect them, but in regard to placing traps before other traps, I think there was some legislation 2 years ago, in regard to Drysdale's traps. He put them so close together that the man who had one below him, he inter~~fer~~^{fer}ed with him.

Q. Should not traps be kept, at any rate a certain distance apart? Don't you think so, on principle?

A. Oh, certainly. Generally where they get the privilege of traps on the Columbia River--I had traps on the Columbia River, and before putting in those traps I had permission from the property owners, and paid them so much a year rent to keep anybody else from coming in, because nobody else had a right to go on their land and put them in.

Q. In the Columbia River the traps are

mostly on the Washington side?

A. Yes, and the majority of the wheels are on the Washington side. It is a common practice for the fishermen, and they have become involved in a great many quarrels, by a man getting right before another with his nets. Drysdale had the same difficulty by my going in front of his traps with seines. You are interested in this matter. I cannot see anything but what you can get the facts and report them, and there will be special legislation on them. I can see no other way, without you get the military to disperse them. If I was situated on Fraser River I would have some military guests there, because I know what a military necessity is. My dear sir, 8 or 10 soldiers have a terrible influence, and these regular soldiers don't know when to stop when they get to firing. The militia are afraid, but the regulars are under discipline, and they do what is told them.

Q. We are not working solely on the regu-

lation of fishing apparatus, but in places of hindrance to the fishing; questions of pollution, of running saw mill refuse into rivers, and things of that sort. We have one particular place where there is about 12 mills, up on the St. Croix River.

A. Our laws are such here that they have not been very effective.

Q. What do you think of the offal in the Fraser River? Do you think it affects the fishing?

A. It has not in the Columbia.

Q. What do you do with the offal in the Columbia?

A. The heads are used mostly by the oil works, and the entrails, I suppose that they are consumed almost as soon as they are in the water, and I think it is the same way on the Fraser.

Q. How about the tails; don't they use the tails up on the Columbia?

A. Well, I don't think they do; there is

not much meat on them. The head is the only thing there is much oil in. I don't think the offal has any effect on other fish, or even any sanitary effect on the water. Now, for instance, out here, and on the Columbia River, I suppose under my cannery I have seen, without exaggeration, 5,000--why it was perfectly like a sand heap, and in a short time there was no sign of anything to be seen of it. It did not even drift away, and there I am satisfied it was consumed by other fishes. I was fearful here at one time that in this locality here there was such a heavy tide coming in, sometimes at the rate of 4 miles an hour, that this would be carried over here, and that I would be complained of, and I invented a scheme to put it down so that it would be impossible for it to get up, but I have never been troubled with it; and one day I had a net that I had used here, and I had laid it over for a shield, and one night by some means that net fell overboard, and it was tied at one end and when we pulled

it up it was filled with dog fish, and there I think I saw where the offal went. I suppose there must have been 250 dog fish in it. Ever since then I have been using dog fish oil in my machinery. I would take the livers and throw them in a tank and boil them.

Q. There is no regulation here against throwing offal in?

A. No. But a great many have made application to me here, showing the utility and the money I could make by putting an oil factory here, and I said, gentlemen I will give you the offal and you are at liberty to do as you please with it. That offal might be turned into fertilizers. I gave a man 5 scow loads of it once. I suppose the offal that went overboard last year would probably amount to 40 or 50 tons.

Q. What per cent. of the fish is lost in dressing?

A. When I was more inexperienced than I am now in the business, I used to make a great many observations, and it is based on Columbia

River fish, and I found that the larger the fish was the less waste. It seems to me from 16 to 20 per cent. was wasted on large fish and on the small, they would run as high as 40 per cent., and seldom went below 25. You know, on a small fish, a man cutting the head, he cuts it square off, and large fish he just takes one cut and makes a circle of it, and it is easy to do; and the same way with the tail, but a man could not get much hold of a small one and would take a good deal farther up, but the big ones he could get a good hold. The larger the fish the less waste. When I was young I wanted to learn the business, and learned these facts by practical observation.

MR. E. E. AINSWORTH, OF AINSWORTH & DUNN,
SEATTLE, WASH., JULY 23, 1895.

(Interviewed by Wm. Wakeham and Richard Rathbun)

Q. It is pretty hard work to say just what we do want to ask you. The fact is we could lay out a scheme of questions that would occupy a week without any trouble. Of course, in talking with the cannerymen it has been the methods, extent of the fishing and the habits of the fish. So far as the canning itself is concerned, we have nothing to do with it. We find in the upper part of these waters -- or in the northern part of these waters, toward the Canadian line that the fish which come in through the Straits of Fuca eventually nearly all go up the Fraser River, and of course the great fisheries in that connection are those about Point Roberts and those off, and in the Fraser River itself. Now, down here we understand that you do not get the sockeye; that is, practically?

A. No, sir; not in any quantity.

Q. What is the quantity; do you get simply stragglers?

A. Simply stragglers.

Q. Do you notice any increase in the number of sockeyes as you fish farther north from here; are they more numerous?

A. Yes, sir; we get practically no sockeyes down this way. In the fall fishing when they are getting those silver salmon here in the bay they will perhaps get -- oh, 2 or 3 dozen in a haul of the seine. We don't consider that we get any sockeyes.

Q. Then with the chinook; when is your season for the chinook here in these waters?

A. We get them --

Q. That is supposing the quinnat to be the chinook.

A. They start in here about the middle of May. The good fishing usually commences the first of June, and lasts until the last part of July. The latter part of this month they will drop off. We will get some up to the middle of August.

Q. Do you get many in the fall, in Sept.?

A. Not tyee; but we get a salmon that is very similar; we call them the jack salmon.

They will not average quite as large. I want

to show you some of them. They are just beginning to catch them in the bay. I think they belong to the salmon family.

Q. Where does the tye spawn?

A. In the streams.

Q. Streams about here?

A. About here.

Q. Where do you get your specimens?

A. The largest catches are made on the Skagit River, and they are made in all the rivers in proportion to their size.

Q. So it would seem as though those 2 salmon may be fish for the Fraser River; that is, the sockeye does not come down here, and the spawning places of the tye -- they call the spring salmon up there.

A. Yes, sir.

Q. Evidently -- of course none of us have seen the thing -- but evidently the Straits of Fuca are the beginning of the river mouth. They are just like a river. The sockeye come in there and are found at places along that shore, and then when they come inside they run up to and into the Fraser River, and the same with the spring salmon; but evidently your spring salmon

varies from that, sufficiently to be considered a distinct variety at any rate.

A. The spring salmon they get at the Fraser River; well, I think they average smaller in the Fraser River.

Q. They get them up to 60 or 70 lbs. sometimes.

A. But those are very rare specimens. You saw our fish out here; those are about the average size. Will they average as much up there?

Q. Yes, what we saw would, but I think Mr. Ewen places the average a good deal lower than that. I am inclined to think about 15 or 18 lbs.

A. Our runs average larger than that. From 20 to 25 lbs. I should say they will average.

Q. You have the steelhead -- do you do anything with the dog salmon in the market?

A. Yes, sir.

Q. And the silver?

A. Yes, sir.

Q. And the humpback?

A. Yes, sir.

Q. Do the sockeye enter any of the rivers in this neighborhood, do you know?

A. Yes, sir, they do. It is thought -- I think it is not generally known that the sockeye run up the Skagit River, but they have only been fishing in the river 4 or 5 years to any extent, and they fish mostly with large mesh gill nets; I think they use about 8 or 9 inch mesh. The sockeyes run up that river also, but they get very few because they don't fish small mesh nets. If they would fish the same size net that they do for sockeyes in other places they would get a good many of those fish up the Skagit river. These fish come in the Skagit and the main body come up and round the point, and some come through here (illustrating) and follow up. Right at Lummi is a good place for sockeyes, and this year they are getting some at Friday Harbor, which shows they run through the San Juan Islands. We get practically no sockeyes south of a line connecting Port Townsend with the mouth of the Skagit River. We get very few tyee salmon in the Snohomish River. We get some there and we get

some up in this river, the Cedar River.

Q. What are the methods of fishing which are carried on for salmon in Puget Sound proper?

A. They are fishing principally gill nets for the spring salmon, or tyees.

Q. Set nets?

A. Set and drift both, but they principally drift.

Q. Do they use any traps for them at all?

A. There are probably 4 traps in operation at the present time, and there will no doubt be more; they are just beginning to put them in.

Q. Where are they setting them?

A. In the vicinity of Utsalady. They catch more fish in the north fork of the Skagit than they do in the south fork.

Q. You know nothing about Lummi Island?

A. Very little. There are 2 traps there near Village Point.

Q. They work there toward the other end of the bay.

A. These 2 at Friday Harbor -- Friday Harbor is on the east side of San Juan Island, and there is a cannery there.

Q. There are no traps south of this?

A. No, sir.

Q. Not even in the rivers?

A. No, sir; not any I think that are doing any fishing.

Q. Where do they use their gill nets; all in these channels?

A. Yes, sir; in the rivers and out on the flats, and I will tell you where one of the best gill net fishing grounds is, and that is Skagit Bay, and also in the vicinity of Utsalady. The fishing at Utsalady has been very light this year, but last year it was very good.

Q. Did you say they did not get sockeye there?

A. They do get some sockeye there.

Q. Now, the purse seines; where are they used, in a general way?

A. Well, they are used right in this bay, more than any other point on the Sound.

Q. Is that with a regular purse seine, fitted with the pursing rings, leads, etc.?

A. Yes, sir.

Q. The same seine that we use on the Atlantic coast?

A. Yes, sir; I think so.

Q. And they throw from this big boat and purse around with this boat in the middle or outside?

A. They have 2 boats, a scow and a skiff. They will have about 9 men in the skiff, and on the stern of the skiff they have their seine coiled up, and when they strike a school they start and run around the school as well as they can with the skiffs, and then purse if from the scow, one man remaining on the scow.

Q. Do they fish down at Tacoma at all?

A. Yes, they do.

Q. And would they use those purse seines up north?

A. They use some around Point Roberts. They also use them in the vicinity of Utsalady in the fall for silver salmon.

Q. What other methods are used for salmon; any at all?

A. The gill nets, traps, and purse seines; those are all.

Q. I think we have been told somewhere it is difficult to take the sockeye with the seine?

A. I think it is; they are a wild fish.

Q. They said there the only way of getting them with the seine was to fish at the mouth of the trap where they were going in.

A. Mr. Drysdale can give you more information about that than we can, because I don't get many fish from around there.

Q. Do you notice any difference in the abundance of the salmon?

A. There is not any.

Q. Well, you cannot say here yet because some years you get more than others.

A. Well, our experience has been over a period of 5 years only. I don't see any decrease, but this year the catch is light all over, and whether it is accounted for by the diminution in the salmon or snow in the mountains. A great many people attribute it to snow in the mountains.

Q. You frequently have off years here?

A. Yes, sir.

Q. We hear of certain years always being considered bad years.

A. Yes, sir. I believe this is an off year. I think every 4 years is an off year.

Q. Of course it is a very difficult

question to come to any conclusion about, ~~th~~ but the question of over fishing in places is a serious one and if it can be checked in time why the fishery must be sustained by it; but, as a matter of fact, it is very seldom recognized at all until the fish have decreased, and of course there are very many notable instances in which the decrease has gone on. Have you been here only 5 years from Cape Vincent? Were you there up to that time?

A. No, sir; I have been away from Cape Vincent 7 years. We have been here 6 years.

Q. On Lake Ontario you know the commercial fisheries have gone right down, scarcely anything being done to what there was at one time, and the fishing does not amount to anything there compared to the other lakes, and even in the other lakes; take Lake Superior, and the fish have decreased there, everywhere; probably less at the eastern end where your brother is interested and around Whitefish Point, than they have at other parts of the lake, and there has been a great deal of fishing going on there, but it does not seem as though it had been enough to cause the decrease, and to the question

asked of the principal fishermen around that lake as to whether the fish have decreased, the universal answer was, yes. There was not a single one -- no one placed the decrease of the whitefish at less than 50 per cent, and from that up to 80 per cent; and with the lake trout the decrease had been very great; not as much as with the whitefish, but still in some places almost as much. On the Canadian shore the fishing has held up pretty well, and on the American shore they are plentiful at Whitefish Point.

A. It has held up at Whitefish Point has it?

Q. Yes; pretty well. There has been a decrease. Have you been there at all?

A. At Whitefish Point?

Q. Yes.

A. No. I have stopped at the Soo, however. I understood that 2 or 3 years ago they had a very large catch on Lake Ontario; is that true?

Q. Well, a large catch for recent years perhaps, but there was no large catch on Lake Ontario, except herring and ciscoes.

A. We heard some report that they got quite a good many at the Duck Islands.

Q. There is no fishing on the American side to what there was. The best whitefish fishing is in the neighborhood of the Bay of Quinté, on the lake, and the continuance of the fishing there is due to artificial planting of fish there. It is one of the best evidences to show of the fish hatchery.

A. That is something we want here; is a fish hatchery on the Sound.

Q. The whitefish that have been planted in Lake Ontario have been Lake Erie whitefish, and the fishermen recognize them, so it shows what hatching has done. You dont get many Lake Ontario whitefish, but just the Lake Erie whitefish on Lake Ontario.

A. Where you can plant a new variety in a new locality and they grow up you can recognize the difference without question.

Q. Which do you regard as the best of your salmon here for fresh fish trade?

A. Well, that is a difficult question to answer. I think ---

Q. What salmon would you wish to have

hatched?

A. The sockeyes, if they would come down this way. We consider them the best fish. The silver sides for the fall -- that is a difficult question to answer for this reason: at different seasons we have the different kinds of fish. In the winter, I think for the longest period, we have the steelhead salmon, and they are a hard, firm fish and excellent for shipping purposes. They are very good stock, and will hold up much longer than any other variety; but for my own table I should never choose a steelhead salmon.

Q. Which are the poor varieties?

A. The dog salmon, or as we call it in our trade, the fall salmon. That is after it has been in the fresh water. I think the dog salmon is a fish that there is a great prejudice against simply on account of its name, more than anything else. It is surely a good fish, and when it first comes in from the sea it is free and nice as can be, but, of course, it is not as red as the sockeye or silver salmon, and that hurts it in the trade and gives it a bad name. All fish, after they have

been in here a certain length of time in the fresh water get poor. The silver salmon get just about as poor as the dog salmon.

Q. You have never noticed the fish up the river here dying?

A. I have not paid any attention to the.-- That is a question I dont understand.

Q. Do you notice that fish taken from some distance up the river are not as good in color as those you get nearer?

A. Oh, yes; after you get up too far they are no good and we dont catch them at all.

Q. Do you notice, in connection with the spring salmon, the change in the color of the meat they allude to?

A. Yes, sir.

Q. When do you get more white ones?

A. The per centage of white ones remains about the same through the entire catch. I dont think that they become white as the season advances. That is, they turn a little lighter, but we get some right at the beginning of the season that are perfectly white. Have you heard anyone explain why they are white?

Q. No; we are not answering questions; we

are asking questions.

A. Did you ever see one cut?

Q. No.

A. I never did until a few days ago; but we had some of those white salmon, and those white salmon would have little red spots scattered through them -- a pink cast.

Q. On the Fraser River we were told that in the spring they got a few of them and that in the fall they become very much more common.

A. We think there are more white salmon in proportion taken out of the Fraser than farther south; and I have been at Point Roberts during the sockeye season there, and a much larger per centage of those spring salmon were white than we get in the Skagit River.

Q. I dont know how you would account for that.

A. There are more of those things which cannot be accounted for readily. There are so many variations in the salmon, and they live on different parts of the coast. The shore salmon varies so much.

Q. Now, the shad; have you had the shad here?

A. The first year we were in business one of the seiners in the bay here brought in about 30 lbs. one day. I dont think they have increased much in the Sound, if any.

Q. You get some every year?

A. We get a few, such as I showed you today.

Q. That was in salt water?

A. Taken in salt water.

Q. Is that an average size?

A. No; it is a small one; it would weigh about $3/4$ lb.

Q. What would be their average size?

A. Possibly 2 lbs. From the Columbia they get larger ones.

Q. Of course, it is the same on the Atlantic coast, they get the largest shad south. On the Sacramento coast they are still larger.

Wakeham:-- In the St. Lawrence we get them small. It is an exception to find a shad weighing 5 or 6 lbs.

Q. What would be your average yearly catch of the shad?

A. Well, they dont fish for them at all. I should say we had caught in the Sound this

year perhaps 150 lbs.

Q. You dont know what rivers they go up?

A. No sir; but I imagine from the fact that they are caught in this trap off the mouth of the Skagit, that they run up the Skagit River.

Q. Is it easy to get over to those traps off the Skagit River?

A. There is a steamer leaves here every morning at 8 o'clock that stops there.

Q. The sturgeon, you say you catch only incidentally in fishing for other fish?

A. That is all. I think we will have sturgeon here, and eventually it will be quite a price. But it is not developed yet.

Q. Your halibut; do you get any halibut in Puget Sound?

A. Yes, an occasional one.

Q. Do you get any along the Straits of Fuca?

A. We do. In the spring, commencing at February, they begin to get fish in the vicinity of Port Townsend, and I presume they could get them there all the summer; although they dont fish for them there. As soon as the weather

moderates they get outside and dont bother with the Straits fishing.

Q. They get them on Flattery Bank?

A. Yes, sir.

Q. And off Neah Bay?

A. Well, that would be Flattery Bank.

Q. Do you get them farther south than that?

A. Not farther than 15 or 20 miles south of the Cape.

Q. Do you get them from around the Queen Charlotte Islands?

A. Yes, sir.

Q. Do you know whereabouts they catch them there, inside the islands or outside?

A. I cannot tell you that. I am very sorry we have not a chart here.

Q. And that fishing, is it winter or spring?

A. We have one schooner up there now; the St. Lawrence. The last time she was out, about 3 weeks ago -- she came in here about a week ago -- she caught her fish off Dixon Entrance.

Q. Now, I dont know whether you are ever going to get many halibut from the Central Alaskan region or not. The Albatross has never taken many halibut. There is no trouble in getting any quantity of cod. Furthermore, the fishing vessels take very few halibut up there. I dont know why it is; with the cod hooks they ought to take halibut just the same, but they dont. They get very few. Whether they have not tried in quite deep enough water -- how deep do they fish around the Queen Charlotte Islands?

A. I cannot answer that question.

Q. Of course we have included in the cod banks everything less than 100 fathoms, and the cod banks are in mostly less than 50 fathoms, and a good deal is under 35 and 40 fathoms.

A. Dont you think there are banks out off the southeastern Alaskan coast?

Q. I am afraid not. There have been several lines of soundings run down there and they have not found it so.

A. I wish the Albatross could carry on extensive investigations on this coast.

Q. There is a bank reported off the mouth of the Columbia, but we can get no indications

of it.

A. I never heard of any fish being taken off there.

Q. Do you fish for cod?

A. We do not.

Q. Are any cod caught in Puget Sound to amount to anything?

A. I think not. In the spring we get quite a good many small cod, but there is very little sale for cod, and the branch of the business is not prosecuted. There is a bank off the vicinity of Tacoma, off Quartermasters Harbor, I think.

Q. Your other fresh fish here are smelt; about where are they taken?

A. We are getting the most of our smelt at the present time from Utsalady.

Q. From the trap nets?

A. Not from the trap nets, but they are caught right around there in the salt water. They are caught in the seines.

Q. What are the small fish besides the smelt?

A. We get the flounder -- we call them the sole -- and perch, and these little tom-cod.

We get some rock cod, but those are caught on hooks.

Q. Dont you get anchovies?

A. We get a small fish here at times that I think is nothing but a small herring. Some fishermen call them anchovies, but I dont think they are.

Q. Do you get the eulichon here?

A. No, sir.

Q. And dont you get large herring here?

A. Not very large. They do farther up in these waters, in British Columbia. We get herring here that will average about 8 inches in length.

Wakeham:- I think in Burrard Inlet they get herring.

A. I am not familiar with the herring they get up there, but I imagine they are about the size we get here. There are none to speak of being caught here now. Up to 2 or 3 weeks ago we had them.

Q. Do you use them for bait?

A. Yes, sir.

Q. What other fish are used for bait?

A. The herring are used for bait almost entirely, but when they are out on the banks and are out of bait they cut up halibut.

Wakeham:-- On the other side they use mackerel for bait and use trout for bait. They are allowed to use trout for bait.

Q. Then your fisheries here are very largely undeveloped, in this region?

A. They are developed just as far as the trade will warrant.

Q. Wont the trade warrant your handling twice as many fish as you do, if you could get them readily?

A. We dont think so.

Q. There are other firms handling fresh fish here?

A. Yes, sir.

Q. Extensively at all?

A. Well, perhaps we have half a dozen firms in town.

Q. Does Tacoma handle them any?

A. There is one firm over there.

Q. Would not there be a demand for halibut

A. No, sir.

Q. How far can you ship those halibut profitably, to Chicago?

A. Chicago uses very few halibut. We send an occasional box to Chicago, and we ship a few to Minneapolis and St. Paul, but our fresh halibut trade here is confined to the town -- what we use locally. Of course, we send some to Oregon, Montana, and a few now into Colorado, Idaho and Utah. When you want to ship halibut east you have to ship them in car load lots, for you have to come into contact with the eastern fish and the only time we can get any profit out of them is in the winter time when they are scarce out there. The New England people last year operated from Vancouver, where they had an agency.

Q. I should think you could get a good many fish in the region of the Mississippi valley -- St. Louis, Minneapolis, St. Paul, Chicago, and through there. Your freight rates might be a little higher.

A. The great trouble in that country, they are not educated up to eating salt water fish, and they have a good supply from the lakes.

The dealers are so interested in their whitefish and trout, and they nearly always get all those fish they want, and they push them and try to exclude all other varieties. Those places dont use enough of our coast fish to warrant shipping car load lots, and when we ship by express the charges are so high. I think the day is coming when they are going to use a great many fish from this coast, but it will take a long time and lots of hard work to educate the people up to using them and create a demand for them. The fresh fish business is increasing here, but it is of a slow growth.

Q. You will come into competition with your brother when you get in the central regions.

A. Yes, sir. Are they handling a good many fish there?

Q. Yes, sir. Of course they are operating on the Canada side; so far as their fishery is concerned, entirely on the Canada side, although they take some fish from the fishermen on this side.

A. Of course, our concern at present has reference to the region around the mouth of the Fraser River; the great question there is whether

Point Roberts is eventually to put in so many nets and run it so as to cut off too much of the run into the Fraser River. At present, of course, there are only about a dozen pound nets fished there, but the nets they are putting in -- take Mr. Drysdale's nets, the lead is 1 1/4 miles long and with 3 pots running out from the shore, and leaving no passage way at all for fish to escape. Of course we cannot say that the fish all return through there, but it is to their own interest not to take all the fish. They are dependent upon the Fraser River for keeping up the supply, as their fish evidently are all Fraser River fish; and we talked with the people there. Mr. Drysdale was not there.

Wakeham:-- The chances are about Point Roberts they will do the same as they have in other places: They will spoil the fishing by putting in too many of those nets.

Q. But there seems to be, as far as the evidence goes, no particular relation between Puget Sound and that region.

Wakeham:-- Your fishing down here does not interfere with that at all?

A. No; I dont think so. I know there are sockeye in the Skagit River. I wish we had a chart here, I would like to have you define that 3 mile limit.

Q. Well, I dont think either of us could do that, we are not sufficiently informed.

Wakeham:-- I believe there is a good deal of fishing to the northern end of Vancouver Island.

Q. Tell us something about the Toredos here. You are troubled very much with the toredo on the piles. How long will piles last?

A. From 1 to 2 years. Let me call Mr. Abright, he can tell you more about them.

MR. ABRIGHT.

Q. How bad are the ship worms here, very bad?

A. Yes, sir; they are pretty bad.

Q. How long will piles last here?

A. Well, I have driven piles that would only last about 7 months.

Q. What do you use for piles, what wood?

A. It is fir, yellow fir.

Q. With the bark off?

A. No; good, sound bark on them. There seems to be a substance in the bark. And it has got to be a real good pile when the bark sticks to the pile; and when that substance gets out of it, then the toredo tunnel the pile.

Q. Do you ever put any preparation on the piles?

A. I have used creosote piles.

Q. Will the creosote piles last any longer?

A. Yes; I pulled out here 2 years ago, 40 or 50 creosote piles that had been in 9 years, and I drove them again, and they are just as sound as a dollar to-day. Takes 32 cents a foot to fix them.

Q. How much will it make a pile cost?

A. Well, a pile here will average about \$20. apiece.

Q. How is it done, in boilers?

A. Just a tub; you take the pile, and it has got to be boiled and lie in water for some time and pretty well soaked. Of course there is always more or less fresh water in the pile; and we steam it for 4 hours, and make the pile almost red by the time we get all the water out of it, and when we get the water out then we dump the creosote in at the same pressure -- 225 pounds. Of course the pores of the wood are dried so, and the creosote goes right into the heart.

Q. Where does the torado go in?

A. Generally tunnel them right at the mud line.

Q. Does it go in above the mud line at all.

A. They do, but they first tunnel them at the mud line.

Q. How far up do they work?

A. As high as the pile.

Q. How high are your tides here?

A. About 12 feet.

Q. What are the extreme tides?

A. I dont know, but they average about 12 feet.

Q. So nearly 12 feet of your pile will be rendered useless?

A. Yes, sir. They dont come above the water. They come up as far as low tide. They only eat as high as low tide, but there is another worm eats them all around on the outside; a little worm.

Q. Have you any of those piles right here with the little worms in them?

A. No; but I can get you some.

Q. The only thing is we shall not be here more than a day.

A. That little worm they eat on the low tides.

Q. How big is it?

A. Oh, just a little bit of a thing. They will take a great big pile, and in a year or so there will be nothing left hardly but a shell. They eat between the high and low tide.

Q. There are none of those piles right around here eaten in that way?

A. No; not right around here. You will find them toward South Seattle.

Q. If you could get a little piece of it; and Mr. Ainsworth could send it on by mail -- just a little piece?

A. All right, I will get it and give it to Mr. Ainsworth. It ought to be preserved in salt water.

Q. No, it will go dry all right.

A. Mr. Coleman knows more about the worm. He knows the name of it. I will see if I can get him on the 'phone.

MR. AINSWORTH.

A. There is one wharf here where they let sewer pipe down and run the piles right through the pipe.

This fishery question is a very difficult one. Rules that would apply to Puget Sound would not apply to the Columbia River at all.

Q. The laws that apply to Puget Sound do not apply ~~x~~ to Point Roberts.

A. No; but I believe it was intended for all the waters, but when they came to partition it off the Gulf of Georgia was not included in it.